

MKT VME EPOXY

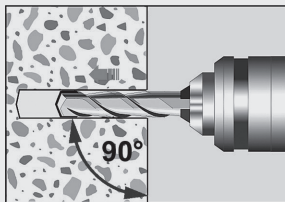


The VME Epoxy Adhesive Anchor System is comprised of a two-component epoxy adhesive provided in cartridges, static mixing nozzles, manual dispensing tools, hole cleaning equipment, and adhesive injection accessories. MKT VME epoxy adhesive may be used with threaded rods or reinforcing bars.

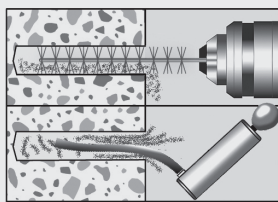
- Used with threaded rod or rebar assemblies
- ICC listed under ICC ESR-2845
- Seismic Design Categories A and B

MKT VME epoxy adhesive anchors are used to resist static, wind and seismic tension and shear loads in cracked and uncracked normal weight concrete with a specified compressive strength of 2500-8500 psi.

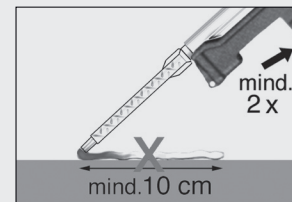
INSTALLATION



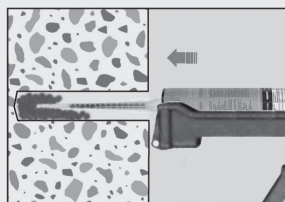
Drill hole to recommended diameter and depth



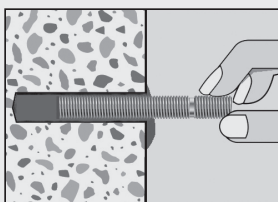
Clean dust from hole using a wire brush and pressurized air.



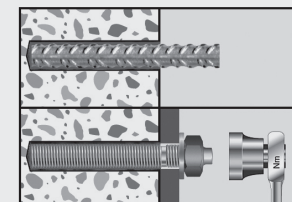
Dispense and discard a bead of epoxy to achieve proper mix indicated by uniform color.



Dispense epoxy filling from bottom of the hole to avoid air pockets.



Insert anchor rod into hole with a slight twisting motion.



Anchor may be loaded after proper curing time.

Description	Part Number	Qty/Case
13 oz. Twin	7800013	12
20 oz. Twin	7800020	12
VM-X Mixing Nozzle	M28305111	1
13 oz. Manual Dispenser	M28353015	1
20 oz. Manual Dispenser	M28353201	1
Blow Out Pump	M33200101	1
SDS+ Shank Adapter	M33350101	1
VM-XLE 10/1000 EXT Tube for Nozzle	M85952101	1
VM-XLE 16/1000 EXT Tube for Nozzle	M85956101	1

Description	Part Number	Qty/Case
Brush EXT 6"	M33968101	1
3/8" (#3) Cleaning Brush	M85851134	1
1/2" (#4) Cleaning Brush	M85852134	1
5/8" (#5) Cleaning Brush	M85854134	1
3/4" (#6) Cleaning Brush	M85855134	1
7/8" (#7) Cleaning Brush	M85956134	1
1" (#8) Cleaning Brush	M85857134	1
1-1/4" (#9) Cleaning BrushH	M85858134	1
1-3/8" (#10) Cleaning Brush	M85859134	1

ICC REPORT ESR-2845

- 2006 International Residential Code (2006 IRC)
- 2006 International Building Code (2006 IBC)
- 2009 International Residential Code (2009 IRC)
- 2009 International Building Code (2009 IBC)
- 2012 International Residential Code (2012 IRC)
- 2012 International Building Code (2012 IBC)

GEL (WORKING) TIMES AND TOTAL CURING TIMES		
Base material temps	Gel time	Curing time
41F/5C	3 Hours	50 Hours
50F/10C	2 Hours	30 Hours
68F/20C	30 Minutes	10 Hours
86F/30C	20 Minutes	6 Hours
104F/40C	12 Minutes	4 Hours

LOAD & PERFORMANCE DATA

Threaded Rod (inch)	3/8"	1/2"	5/8"	3/4"	7/8"	1"	-	1-1/4"
Reinforcing Steel*	#3	#4	#5	#6	#7	#8	#9	#10
Effective Embedment	2-3/8"	2-3/4"	3-1/8"	3-1/2"	3-1/2"	4"	4-1/2"	5"
Allowable Loads, Tension ¹ in 2500 psi Concrete	1930	2400	2910	3450	3450	4215	5030	5890

SPACING & EDGE DISTANCE

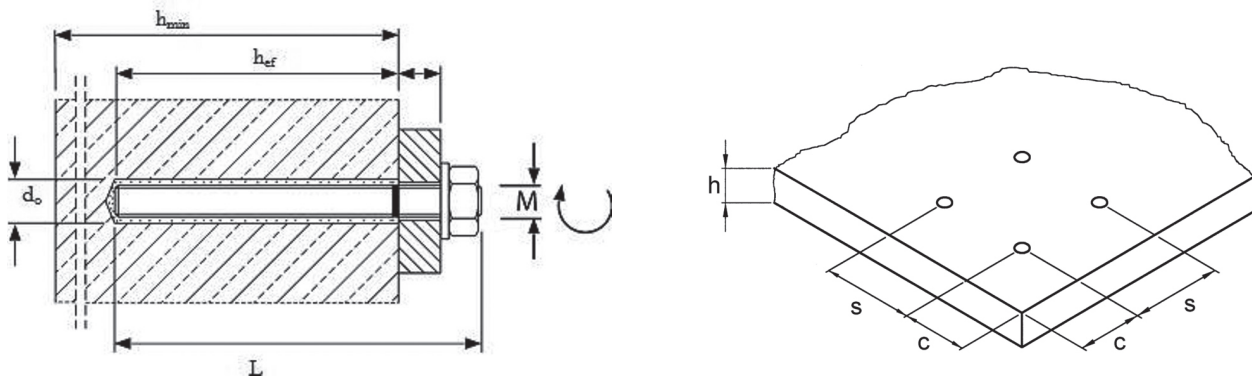
Effective anchorage depth h_{ef}									
Critical Spacing S	1-7/8"	2-1/2"	3-1/8"	3-3/4"	4-3/8"	5"	5-5/8"	6-1/4"	
			3-3/8"*						
Critical Edge Distance C	1-7/8"	2-1/2"	3-3/8"*	3-3/4"	4-3/8"	5"	5-5/8"	6-1/4"	
Member thickness h_{min}	$h_{ef} + 1-1/4 d_o$					$h_{ef} + 2 d_o$			

INSTALLATION PARAMETERS

Drilled hole diameter d_o	7/16"	9/16"	11/16"	7/8"	1"	1-1/8"	1-3/8"	1-3/8"	1-1/2"*
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¹ A safety factor of 1.48 was used to calculate the allowable loads. This is based on a load combination of 30% dead loads and 70% live loads. Based on temperature range A (max short term temp 104F (40 C) max long term temp 75F (24C)).

* Denotes rebar qualities only



MKT VME EPOXY CONTINUED

in 4,000 psi concrete	Threaded Rod	3/8	1/2	5/8	3/4	7/8	1	1-1/4
$h_{ef,min}$	Inch	2-3/8	2-3/4	3-1/8	3-1/2	3-1/2	4	5
$h_{ef,max}$	Inch	4-1/2	6	7-1/2	9	10-1/2	12	15
appr. $N_{cr, hef,min}$	[lbf]	-	883	1,032	1,291	1,422	1,857	2,901
appr. $N_{cr, hef,max}$	[lbf]	-	1,927	2,477	3,321	4,265	5,571	8,704
appr. $N_{uncr, hef,min}$	[lbf]	1,259	1,825	2,481	3,196	3,608	4,572	6,825
appr. $N_{uncr, hef,max}$	[lbf]	2,385	3,981	5,953	8,218	10,824	13,716	20,474
appr. $V_{cr, hef,min}$	[lbf]	-	1,902	2,223	2,781	3,062	3,999	6,249
appr. $V_{cr, hef,max}$	[lbf]	-	4,150	5,335	7,152	9,186	11,998	18,747
appr. $V_{uncr, hef,min}$	[lbf]	1,355	3,930	5,343	6,883	7,771	9,848	14,699
appr. $V_{uncr, hef,max}$	[lbf]	2,128	4,673	7,444	11,017	15,207	19,950	31,920

in 4,000 psi concrete	Rebar	#3	#4	#5	#6	#7	#8	#9	#10
$h_{ef,min}$	Inch	2-3/8	2-3/4	3-1/8	3-1/2	3-1/2	4	4-1/2	5
$h_{ef,max}$	Inch	4-1/2	6	7-1/2	9	10-1/2	12	13-1/2	15
appr. $N_{cr, hef,min}$	[lbf]	-	883	1,032	1,291	1,422	1,857	2,350	2,901
appr. $N_{cr, hef,max}$	[lbf]	-	1,930	2,477	3,321	4,265	5,571	7,050	8,704
appr. $N_{uncr, hef,min}$	[lbf]	1,259	1,825	2,481	3,196	3,608	4,572	5,639	6,825
appr. $N_{uncr, hef,max}$	[lbf]	2,385	3,981	5,953	8,218	10,824	13,716	16,916	20,474
appr. $V_{cr, hef,min}$	[lbf]	-	1,902	2,223	2,781	3,062	3,999	5,062	6,249
appr. $V_{cr, hef,max}$	[lbf]	-	4,150	5,335	7,152	9,186	11,998	15,185	18,747
appr. $V_{uncr, hef,min}$	[lbf]	1,355	3,930	5,343	6,883	7,771	9,848	12,145	14,699
appr. $V_{uncr, hef,max}$	[lbf]	2,408	4,378	6,787	9,638	13,135	17,295	21,892	27,803

Calculation of weighted average for the conversion factor, $a = 1.2(0.3) + 1.6(0.7) = 1.48$

1 Temperature Range A: Long term service temperature = 110°F, short-term service temperature = 176°F

ADHESIVE VOLUME ESTIMATING GUIDE

Type Package	Liquid Roc 200 Single Tube	Liquid Roc 200 Twin Tube	Liquid Roc 300 Pouch	Liquid Roc 300 Twin Tube	Liquid Roc 500+ Single Tube	Liquid Roc 500+ Twin Tube	VME Twin Tube	VMZ Internal Thread Injection System	Liquid Roc 700+ Single Tube	Liquid Roc 700+ Twin Tube
Net Contents	10 fl. oz.	28 fl. oz.	5.5 fl. oz.	28 fl. oz.	8.5 fl. oz.	22 fl. oz.	13oz.	20 oz.	10 fl. oz.	28 fl. oz.
Useable Vol.	15 cu. in.	45 cu. in.	10 cu. in.	45 cu. in.	13 cu. in.	34 cu. in.	20 cu. in.	31 u. in.	15 cu. in.	45 cu. in.
Rod Diameter	Linear inches of embedment into solid base material									
3/8"	63	133	105	312	91	237	140	215	63	133
1/2"	45	95	75	225	65	169	100	153	45	95
5/8"	35	73	38	172	50	130	76	118	35	73
3/4"	28	58	30	137	40	104	61	94	28	58
7/8"	23	49	25	115	33	87	51	79	23	49
1"	19	40	21	92	27	71	42	64	19	40
1-1/4"	14	30	16	71	20	54	32	49	14	30
Rod Diameter	Linear inches of embedment using screens into hollow base material									
3/8"	-	-	-	296	-	-	-	-	-	-
1/2"	-	-	-	172	-	-	-	-	-	-
5/8"	-	-	-	112	-	-	-	-	-	-
3/4"	-	-	-	62	-	-	-	-	-	-

ENGINEERING DATA

HOW TO SPECIFY

- 1 Select anchor diameter based on loading requirements.
- 2 Determine thickness of material to be anchored (if grout or shimming is to be used between material and concrete surface, add thickness of grout/shims to thickness of material to obtain total thickness of material to be anchored.)
- 3 Select anchor length that will satisfy total thickness of material, head clearance and embedment of anchor diameter selected.

SPECIFICATIONS, LIQUID ROC 200, 300, 500+, 700+

B Nominal Diameter (in.)						
Bolt Size (in.)	Capsule or Pouch	Single or Twin Tube	E - Min Embedment (in.)	S - Anchor Spacing (in.)	M - Edge Distance (in.)	T - Maximum Tightening Torque (ft. lbs.)
3/8"	7/16"	1/2"	3-1/2"	3-1/2"	3-1/2"	13
1/2"	9/16"	5/8"	4-1/2"	4-1/2"	4-1/2"	22
5/8"	11/16"	3/4"	5-1/2"	5-1/2"	5-1/2"	55
3/4"	7/8"	7/8"	6-1/2"	6-1/2"	6-1/2"	106
7/8"	1"	1"	8"	8"	8"	135
1"	1-1/8"	1-1/8"	9"	9"	9"	184

REDUCTION FACTORS

Tension		Shear		
Spacing (S) and Edge Dist. (M)	Factor (F)	Spacing (S) and Edge Dist. (M)	Direction of load	Factor (F)
S min. = 0.50S	0.7	S min. = 0.50S	toward edge not toward edge	0.6 1.0
M min. = 0.50M	0.7	M min. = 0.50M	toward edge not toward edge	0.4 0.5

GENERAL SPECIFICATIONS

Adhesive resin anchor shall be (polyester) (epoxy) (acrylic) as manufactured by MKT Fastening, LLC, #1 Gunnebo Dr., Lonoke, AR 72086

INSTALLATION

Adhesive resin anchors shall be installed in holes drilled with carbide tipped bits conforming to ANSI specification B212.15-94. Minimum installation depth and hole preparation shall be as recommended by manufacturer.

LIQUID ROC 300 CAPSULE ANCHORS

Anchor Diameter	Hole Diameter	Embedment Depth	Capsules Required
3/8"	7/16"	3-1/2"	(1) 3/8"
3/8"	7/16"	5-1/4"	(2) 3/8"
3/8"	7/16"	7"	(2) 3/8"
1/2"	9/16"	4-1/2"	(1) 1/2"
1/2"	9/16"	6-3/4"	(1) 3/8" & (1) 1/2"
1/2"	9/16"	9"	(2) 1/2"
5/8"	11/16"	5"	(1) 5/8"
5/8"	11/16"	7-1/2"	(1) 1/2" & (1) 5/8"
5/8"	11/16"	10"	(2) 5/8"
3/4"	7/8"	6-1/2"	(1) 3/4"
3/4"	7/8"	9-3/4"	(1) 5/8" & (1) 3/4"
3/4"	7/8"	13"	(2) 3/4"
7/8"	1"	7-1/2"	(1) 7/8"
7/8"	1"	11-1/4"	(2) 3/4"
7/8"	1"	15"	(2) 7/8"
1"	1-1/8"	8-1/2"	(1) 1"
1"	1-1/8"	12-3/4"	(1) 3/4" & (1) 1"
1"	1-1/8"	17"	(2) 1"
1-1/4"	1-3/8"	7-1/4"	(2) 3/4"
1-1/4"	1-3/8"	11"	(1) 3/4" & (1) 1"

FOR REDUCED SPACING AND EDGE DISTANCES

- 1 Linear interpolation is allowed for edge distances falling between 0.50M and 1.00M, and anchor spacing falling between 0.50S and 1.00S.
- 2 Load reduction factors should be combined where applicable. Where three or more anchors are used, spacing reduction factors must be multiplied together. Where two or more edge distances affect performance, edge reduction factors must be multiplied together. When a group of anchors is affected by both reduced spacing and reduced edge distances, the edge and spacing reduction factors must be multiplied together.

